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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,923	03/22/2004	Seock-Hwan Kang	21C-0092	2032

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EXAMINER	
RIELLEY, ELIZABETH A	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/805,923	KANG ET AL.
	Examiner	Art Unit
	Elizabeth A. Rielley	2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Amendment filed 2/2/06 has been entered and considered by the Examiner. Currently, claims 1-34 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims1-3 and 14-28 are rejected under 35 U.S.C. 102(a) as being anticipated by Suga et al (EP 1447785).

In regard to claim 1, Suga et al ('785) teach a surface light source device (figure 18) comprising: a light source body including a first substrate (top 5 in figure 18; 5a in figure 25; paragraphs 286-290 and 138-140) through which light is output (see figure 18 in Suga as well as figure 18 below); a second substrate (bottom of 16; paragraphs 286-290 and 121) disposed to face the first substrate (see figure 18), a cold cathode light source (2) that is located in a space defined by a tube, the tube located between two substrates (see figure 18), that space, with in the tube, contains a discharge gas (described in paragraph

25) that is activated by a voltage[1] to generate light (as described in paragraph 25; please see figure 18 as described below); a voltage applying part to proved an electric signal to excite the discharge gas in the space (this is how a cold cathode works[2]) a light diffusing part (5 is a light diffusing layer, see paragraphs 138-140) to diffuse the light generated from the light source body (that is, the cold cathode) to output diffused light (abstract; paragraphs 82, 25, 28, and 13).

In regard to claim 2, Suga et al ('785) teach that the light diffusion part (5) is integrally formed with the light source body (11; see figure 1).

In regard to claim 3, Suga et al ('785) teach at least one partition disposed between the first and second substrates (side part of 16. see figure 18), the space being regionally divided by the at least one partition (see figure 18); a sealing member (lower 5 in figure 18, 14 in figure 28; paragraph 99) disposed between the first (top 5 in figure 25) and second substrates (16) to seal the space; and a voltage applying part to provide the electric signal to excite the discharge gas in the space (not in figures; paragraphs 82, 25, and 28).

In regard to claim 14, Suga et al ('785) teach the light diffusion part (5b; figure 25) includes a light diffusion pattern (see figure 25) formed on a surface of the first substrate (5a) to diffuse the light generated from the light source body.

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[1] http://en.wikipedia.org/wiki/Cold_cathode
[2] http://en.wikipedia.org/wiki/Cold_cathode

In regard to claim 15, Suga et al ('785) teach the first substrate (5a) has first and second surfaces opposite to each other (see figures 25 and 18) and the first surface is in contact with the space and the at least one partition (see figure 25; partitions are also 13; paragraphs 109-110), the light diffusion pattern including a plurality of convex surfaces successively formed on the second surface (see figure 29).

In regard to claim 16, Suga et al ('785) teach the first substrate (5a) has first and second surfaces opposite to each other and the first surface is in contact with the space and the at least one partition (see figures 25 and 18), the light diffusion pattern including a plurality of convex members formed on the second surface (see figure 29) such that density of the convex members is higher at a first area through which the light passes than at a second area adjacent to the at least one partition (see figure 17; the light diffusion pattern covers only the area of the display where light passes, and not 2 therefore the density of the light diffusion pattern is greater over the surface which light passes in the light emitting device).

In regard to claim 17, Suga et al ('785) teach the convex members at the first and second areas have a substantially identical size (see figure 29, the light diffusion pattern is the same size; figure 18 the light diffusion pattern is over the entire light emitting device).

In regard to claim 18, Suga et al ('785) teach the first substrate (5a) has first and second surfaces opposite to each other and the first surface is in contact with the space and the at least one partition (13), the light diffusion pattern including a plurality of convex members (5b; see figure 29) formed on the second surface such that the convex members have a larger size at an area adjacent to the at least one partition than at an area through which the light passes (see figure 24 which shows varying sizes of

convex members; figure 18 shows the light diffusion pattern covering the entire light emitting deice. Therefore the convex members of varying sized will vary throughout the length of the substrates making a smaller convex shape in an area of the display where light passes, and a larger shape at an area adjacent to an area of one partition – 13).

In regard to claim 19, Suga et al ('785) teach the first substrate (5a) has first and second surfaces opposite to each other and the first surface is in contact with the space and the at least one partition (see figure 18), the light diffusion pattern including a plurality of convex surfaces successively formed on the first surface (see figure 26).

In regard to claim 20, Suga et al ('785) teach the first substrate (5a) has first and second surfaces opposite to each other and the first surface is in contact with the space (see figure 18) and the at least one partition, the light diffusion pattern including a plurality of convex surfaces (see figure 26) successively formed on both the first (figure 14) and second surfaces (figure 15; as well as figure 18 with the upper 5a having both sides attached to a light diffusion pattern 5b from both the upper "5" and lower "5").

In regard to claim 21, Suga et al ('785) the first substrate (5a) has first and second surfaces opposite to each other and the first surface is in contact with the space and the at least one partition (see figure 18), the light diffusion pattern including a plurality of V-shaped grooves successively formed on the second surface (see figure 25).

In regard to claim 22, Suga et al ('785) teach the V-shaped grooves each have a rough surface such that a plurality of convex surfaces successively formed on the surface of the respective V-shaped grooves (see figure 24, V-shaped groove being formed by the varying sizes of 12 and covering 34, therefore the V-shaped groove has a plurality of convex surfaces).

In regard to claim 23, Suga et al ('785) teach the first (5a) substrate has first and second surfaces opposite to each other and the first surface is in contact with the space and the at least one partition (see figure 18), the light diffusion pattern including a plurality of protrusion members discretely formed on the second surface, the protrusion members each having a cross-sectional view of a polygonal shape (see figure 31).

In regard to claim 24, Suga et al ('785) teach the first substrate (5a) has first and second surfaces opposite to each other and the first surface is in contact with the space and the at least one partition, the light diffusion pattern including a plurality of grooves discretely formed on the second surface, the grooves each having a cross-sectional view of a polygonal shape (see figures 29 and 31).

In regard to claim 25, Suga et al ('785) teach 2 the light diffusion part (5b) includes a plurality of light diffusion members disposed on a surface of the first substrate through which the diffused light is output (see figure 18, 25, and 31).

In regard to claim 26, Suga et al ('785) teach the light diffusion members (12; figure 24; paragraph 114) have a substantially identical size (see figure 18) and are attached on the surface of the first substrate by adhesive (34; paragraph 100).

In regard to claim 27, Suga et al ('785) teach the light diffusion members have various sizes (see figure 24) and are attached on the surface of the first substrate by adhesive (34).

In regard to claim 28, Suga et al ('785) teach the light diffusion members have a substantially identical size (see figure 18) and are securely held by a binder that is coated on the surface of the first substrate (34). The Examiner notes that the recitation of the binder being coated is a process by product recitation. The patentably of a claim resides in the final product and not the process by which it was manufactured. Accordingly, Suga et al's ('785) teaching of a binder layer on a substrate is considered to meet the claimed recitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-6, 11-13, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al (EP 1447785) in view of Okajima (US 6072276).

In regard to claims 4-6 and 30, Suga et al ('785) disclose all the limitations set forth, as described above, except a sealing layer is formed between the at least one partition and the first substrate so that the space is sealed at a contact area between the at least one partition and the first substrate; a first sealing layer is formed between the sealing member and the first substrate, and a second sealing layer is formed between the sealing member and the second substrate; and the space is defined by surfaces of the first and second substrates, the at least one partition and the sealing member, the surfaces are coated with a fluorescent layer. Okajima ('276) teach a light emitting device (figure 1) where a sealing layer (5; figure 1; column 2 lines 41-55) is formed between the at least one partition (6) and the first substrate (1) so that the space (not numbered; see figure 1) is sealed at a contact area between the at least one partition (6) and the first substrate (1; see figure 1); a first sealing layer (4; column 10 line 63 to column 11 line 5) is formed between the sealing member (5) and the first substrate (1), and a second sealing layer (7) is formed between the sealing member (5) and the second substrate (8); and the space is defined by surfaces of the first (1) and second substrates (8), the at least one partition (6) and the sealing member (7), the surfaces are coated with a fluorescent layer (10, 11, 12; column 10 line 63 to column 11 line 31) in order to improve the contrast and uniformity of the emitted light (column 10 lines 39-45). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display of Suga

et al ('785) with the configuration of sealing layers and fluorescent layers of Okajima. Motivation to combine would be to improve the contrast and uniformity of the emitted light of the display.

In regard to claims 11-13, Suga et al ('785) disclose all the limitations set forth, as described above, except the at least one partition includes two or more partitions having a substantially identical length smaller than a distance between opposite ends of the space in a longitudinal direction of the partitions; the partitions each have first and second end portions opposite to each other in the longitudinal direction, the partitions being in contact with the sealing member such that the first end portions of odd-numbered ones of the partitions are in contact with the sealing member and the second end portions of even-numbered ones of the partitions are in contact with the sealing member to partition the space in a serpentine form; and the partitions are arranged in a direction substantially perpendicular to the longitudinal direction of the partitions and substantially parallel with each other. Okajima ('276) teach at least one partition includes two or more partitions (multiple 6's; see figure 1) having a substantially identical length smaller than a distance between opposite ends of the space in a longitudinal direction of the partitions (see figure 1); the partitions each have first and second end portions opposite to each other in the longitudinal direction (see figure 1), the partitions being in contact with the sealing member (16) such that the first end portions of odd-numbered ones of the partitions are in contact with the sealing member and the second end portions of even-numbered ones of the partitions are in contact with the sealing member (7) to partition the space in a serpentine form (the first ends are always in contact with sealing member 4, the second ends are always in contact with sealing member 7); and the partitions are arranged in a direction substantially perpendicular to the longitudinal direction of the partitions and substantially parallel with each other (see figure 1) in order to improve the contrast and uniformity of the emitted light (column 10 lines 39-45). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display of Suga et al ('785) with the sealing layers of

Okajima. Motivation to combine would be to improve the contrast and uniformity of the emitted light of the display.

Claims 7-10 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al (EP 1447785) in view of Okajima (US 6072276) and in further view of Winsor (US 20020117959).

In regard to claims 7, 8, and 32, Suga/Okajima teach all the limitations set forth, as described above, except the surfaces of the first and second substrates have areas in contact with the at least one partition and remaining areas not in contact with the at least one partition, the fluorescent layer being formed on the remaining areas of the surfaces of the first and second substrates; the fluorescent layer is formed on the surfaces of the at least one partition which include a surface in contact with the sealing layer. Winsor ('959) teach the surfaces of the first (16; figure 5; paragraphs 22-23) and second (14) substrates have areas in contact with the at least one partition (18) and remaining areas not in contact with the at least one partition (not numbered, see figure 5), the fluorescent layer being formed on the remaining areas of the surfaces of the first and second substrates (28, 34; paragraphs 34 and 37); the fluorescent layer (30; paragraph 37) is formed on the surfaces of the at least one partition (18) in order to produce a light-emitting device that has a uniform display which is readily scalable to larger display sizes (paragraph 7). Okajima ('276) teaches a fluorescent layer (10) which include a surface in contact with the sealing layer (7) in order to improve the contrast and uniformity of the emitted light (column 10 lines 39-45). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the light display of Suga with the fluorescent layer of Okajima and Windsor. Motivation to combine would be to have a device with a uniform display that is readily scalable to larger display sizes and to improve the contrast and uniformity of the emitted light.

In regard to claims 9, 10, and 33, Suga/Okajima teach all the limitations set forth, as described above, except a light reflecting layer formed between the fluorescent layer and the surfaces of the second substrate and the least one partition; the light reflecting layer is made of material including aluminum oxide (Al.sub.2O.sub.3) or titanium oxide (TiO.sub.3). Winsor ('959) teaches a light reflecting layer (26; figure 5; paragraph 34) formed between the fluorescent layer (28; paragraph 34) and the surfaces of the second substrate (14) and the least one partition (20; paragraph 32); the light reflecting layer (26) is made of material including aluminum oxide or titanium oxide (paragraph 34) in order to direct light to emit from the top of the lamp (paragraph 34). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the light display of Suga/Okajima with the reflecting layer of Winsor. Motivation to combine would be to direct light to emit from the top of the lamp.

Claims 29, 30, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al (EP 1447785).

In regard to claim 29, Suga et al ('785) teach a display device (figure 1) displaying images in response to electrical signals externally provided (paragraph 28), comprising: a display panel (10) to display the images (paragraph 81); a surface light source device (11) to provide surface light to the display panel (paragraph 81), the surface light source device including: a light source body including a first substrate (top 5 in figure 18; 5a in figure 25; paragraphs 286-290 and 138-140) through which light is output (see figure 18); a second substrate (bottom of 16; paragraphs 286-290 and 121) disposed to face the first substrate (see figure 18), a space being formed between the first and second substrates (2, see figure 18); the space filled with a discharge gas to generate light (the space formed is the cold cathode, a

cold cathode is filled with a discharge gas to generate light as described in paragraph 25) a voltage applying part to proved an electric signal to excite the discharge gas in the space (this is how a cold cathode works[3]) a light diffusing part (5 is a light diffusing layer, see paragraphs 138-140) to diffuse the light generated from the light source body (that is, the cold cathode) to output diffused light (abstract; paragraphs 82, 25, 28, and 13). Suga et al ('785) are silent regarding the limitation of a receiving container to receive and securely hold the display panel and the surface light source device. However, it would have been obvious at the time of the invention to one of ordinary skill in the art to have a receiving container to receive and securely hold the display panel and the surface light source device, since it is known in the art that such a container is necessary in order to keep the display panel and the surface light together and produce a display.

In regard to claim 30, Suga et al ('785) teach at least one partition (side part of 16; see figure 18) disposed between the first and second substrates, the space being regionally divided by the at least one partition; a sealing member disposed between the first and second substrates to seal the space (lower 5 in figure 18; 14 in figure 28; paragraph 99).

In regard to claim 34, Suga et al ('785) teach the light diffusion part (5b; figure 25) includes a light diffusion pattern (see figure 25) formed on a surface of the first substrate (5a) to diffuse the light generated from the light source body.

[3] http://en.wikipedia.org/wiki/Cold_cathode

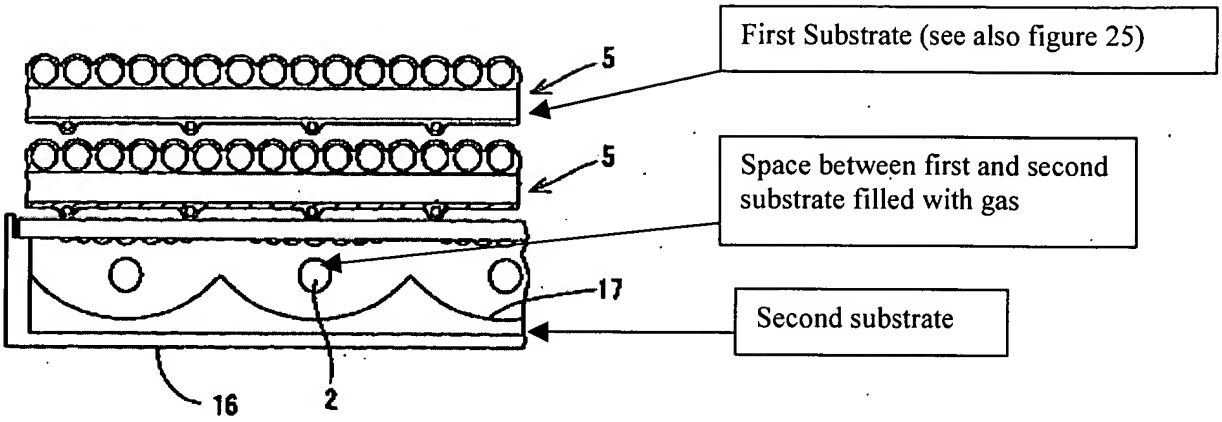
Response to Arguments

Applicant's arguments filed 2/2/06 have been fully considered but they are not persuasive.

In regard to Applicant's argument that the prior art of record fails to teach a light source body including a first substrate through which light is output; a second substrate disposed to face the first substrate, a space being formed between the first and second substrates; the space filled with a discharge gas to generate light a voltage applying part to proved an electric signal to excite the discharge gas in the space, the Examiner respectfully disagrees. Suga et al ('785) teaches a cold cathode light source (2) that is a space defined by a tube between two substrates (see figure 18), that space contains a discharge gas (described in paragraph 25) that is activated by a voltage[4]. Therefore, the prior art of record teaches all the limitations in the current application (please see figure 18 below describing in detail the limitations of the claimed invention as taught by Suga et al).

[4] http://en.wikipedia.org/wiki/Cold_cathode

Fig. 18



Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Rielley

Examiner
Art Unit 2879
14 April 2006

MARICELI SANTIAGO
PRIMARY EXAMINER